FACTORS AFFECTING PORTFOLIO MANAGEMENT DECISION OF COMMON INVESTORS: AN EXPOSITION OF SELECTED BEHAVIORAL PHENOMENA

A

SYNOPSIS

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GIRIJESH KUMAR

UNDER THE SUPERVISION OF

PROF. SUNITA KUMARI MALHOTRA

DEPARTMENT OF MANAGEMENT

FACULTY OF SOCIAL SCIENCES

DEPARTMENT OF MANAGEMENT, FACULTY OF SOCIAL SCIENCES

DAYALBAGH EDUCATIONAL INSTITUTE (DEEMED TO BE UNIVERSITY)

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SECTION I: INTRODUCTION

People earn for livelihood and after meeting their expenditure, tend to save some amount. Saving tendency of individuals helps at the time of need, but if money is lying idle, its value will depreciate gradually. Hence it should be invested.Investment refers to the concept of deferred consumption, which involves purchasing an asset, giving a loan or keeping funds in a bank account with the aim of generating future returns. This return is the prime motive of investments although safety of principal amount is the first objective of any investment. Every individual follows his/her own strategy for managing his investments depending upon the risk appetite, age bracket and availability of funds. An individual's portfolio management strategy would also be governed by the level of his education in general and knowledge of financial world. It will also be affected by type of persons in his socialcircle or if he/she has access to the financial advisors, planners etc. (Shrotriya V., 2019).

An individual or retail stock investor is exposed to multiple situations during the day where he/she is expected to decide on events with high monetary stakes. Hence, it is imperative that financial decision maker should be able to evaluate complete information flows and take a comprehensive decision. Most of the times, he/she may be obligated to take an uninformed decision with partial information in limited time. His/her experiential wisdom and instincts play a role here. Investment decision making is supported by a confluence of rationality and intuitive appeal. The genesis of traditional and modern finance models lies in the rational approach. However, owing to multiple contextual constraints, investor may move away from pure rationality in decision making. Studying this process of diverging from rationality, role of contextual variables, behavioral mediation and alike has become an interesting field of enquiry for researchers under the emerging domain of behavioral finance. Thaler (1980) articulates that in certain well-defined circumstances, decision makers' behavior is inconsistent with economic rational theory; where they under-weigh the opportunity costs, fail to ignore sunk costs, choose not to choose. This present study is an attempt to investigate investor decision making from behavioral perspective.

The subsequent section discusses the concept of decision making. Next, behavioral finance and investor's decision making under the purview of bounded rationality and investment portfolio management process areexplored. In the last part of this section, need of the study is identified.

1.1 DECISION MAKING : AN OVERVIEW

The decision making is a cognitive process which results in the selection of a course of action among several alternatives(Antony A. & Joseph A.I., 2017). In this process, the emphasis is on thinking things through and also on weighing the outcomes and alternatives before arriving at a final decision. Every decision-making process produces a final choice. The output can be an action or an opinion of choice. Investment decisions made today often are critical for financial security in later life, due to the potential for large financial loss and the high costs of revising or recovering from a wrongful investment decision. Most of the equity investors do not have the sufficient knowledge of basic economic concepts required to make investment decisions. Thus, there is a need to conduct research on factors, other than knowledge, that could influence investment decisions.

Initially, investor wants to find out the information about the financial products, return, risk involved and tax-benefit. Investor collects the information from different sources like Personal sources such as Family, friends, co-workers, and Public sources such as mass media and credit rating agencies. After collecting the information, investors arrive at some conclusion about which companies' stock can be purchased. Then an investor compares different stocks on set parameters, which he/she thinks required. The evaluation process varies from investor to investor. After evaluating the stock based on various factors the investor chooses and purchases the most preferred stock.Theoretically, investors are considered to be rational in their investment decision-making. It says that the investors follow the basic concept of traditional finance and this decision was taken based on intrinsic value of securities/ stock in their trading behavior. But it has been observed that many of the behavioral (psychological) factors adversely affect the investment decision of the investors(Antony A. & Joseph A.I., 2017). Based on above discussion, decision making can be rational and irrational viz.

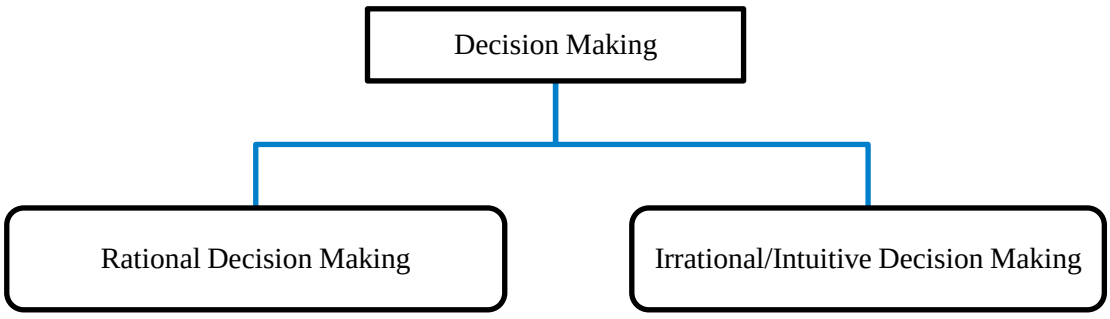

Figure: 1 Division of Decision Making

Investment behavior is an innovative sub-area of research in behavioral finance that explains exactly how the investors judge, predict, investigate and review the processes for decision making that includes investment psychology, information gathering, defining and understanding, research and analysis. This whole process is "investment behavior" (Slovic, 1972; Alfredo and Vincente, 2010).

Rational decision making is a process where an individual uses facts and information, analysis and step-by-step procedure to come to a decision. It is a multi-step process for making choices between alternatives by assuming that he/she has time, cognitive ability and resources to evaluate each choice against the others. Rational decision theory asserts that an individual attempts to generate various strategies and follow specific logical procedures to resolve problems according to the nature of problem, timing, and decision environment [Gianakis (2004), Lindblom (2005)].Rational decision making does not consider factors that cannot quantified. It leaves out consideration of personal feelings, loyalties or sense of obligation. It creates a bias towards the preference for facts, data and analysis over intuition or desires. Common investor's behavior are not influenced by their emotions, they search all the information required and choose the best alternative among various available investment options for investment after evaluating them by using different tools and techniques.

A rational investor can be defined as a one that always (i) updates his beliefs in a timely and appropriate manner on receiving new information; (ii) makes choices that are normatively acceptable (Thaler, 2005).

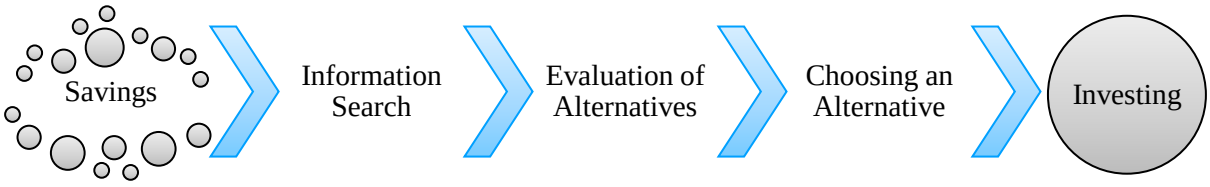

Figure: 2 Rational Investment Decision Making Behavior of Common Investors

Source: Self-constructed through observation

Irrational/ Intuitive decisions are generally governed by the emotions and emotions are significant part which makes us human. Investment decision making process is influenced by various unavoidable behavioral biases that human brain process information using shortcuts and emotional filters (Elhussein&Abdelgadir, 2020). The bounded-rationality framework [Simon (1982, 1991)] asserts that

individual investors are regarded as attempting to make rational decision but they often lack important information on the definition of the problem, the relevant criteria, and so on. In general, the judgment of people is bounded in their rationality, so they will forego the best solution in favor of acceptable or reasonable one that is so-called the decision makers' satisfies (March and Simon, 1958).Thaler(2000) argue that investors have bounded willpower so they give greater weight to current concerns than to future concerns that will lead to a variety of ways in which theirtemporary motivations are inconsistent with long-term interests. It is understood thatdespite the investment decisions complying with rational decision-making process, thebehavioral biases would still exist in the mind of investors.

1.2 BEHAVIORAL FINANCE AND DECISION MAKING

Decision-making can be defined as the process of choosing a particular alternative from many available alternatives. It is a complicated multi-step process involving analysis of various personal, technical and situational factors. There are no exceptions in the case of making decisions in the stock markets either. Taking investment decisions is the most crucial challenge faced by investors. Some personal factors are age, education, income etc. On the technical side, investment decisions can be derived from various models of finance, for e.g. the capital asset pricing model (CAPM). Decisions should not be reached without considering situational factors that take into account the environment, the market psychology in other words.

Effective decision making in the stock market requires an understanding of human nature in a global perspective on top of financial skills. Thus cognitive psychology should be given importance in the process of decision-making (Chandra, 2008). Behavioral Finance is becoming an integral part of decision-making process because it heavily influences the investors' performance". (Banerjee, 2011) The bull market from 2004 to 2007 and the subsequent financial crisis, there has been a lot of fresh focus on the irrational investor. Studying irrational investor behavior has become important.An understanding of how our emotions result in irrational behavior is indispensable for any investor (Parikh, 2011).

Investors can educate themselves about the various biases they are likely to exhibit and then take steps towards avoiding it thus improving their effectiveness. It is only when you combine sound intellect with emotional discipline that you get rational behavior" (Parikh, 2011). Some common mistakes

made by investors are selling too soon while booking profits, holding too long while facing losses, buying overpriced stocks based on market sentiments and positive evaluation by all and sundry.

1.3 INVESTMENT AVENUES FOR COMMON INVESTORS

An understanding of the core concepts of finance/investments and a thorough analysis of the available options help investorsin the creation of a portfolio that maximizes returns while minimizing risk exposure.In India, investment alternatives are continuously increasing along with new developments in the financial market. Investment is now possible in corporate securities, public provident fund, mutual fund etc. Thus, wide varieties of investment avenues are now available to the investors viz. Shares, Debentures and Bonds, Bank Deposits, Post Office Savings, Public Provident Fund (PPF), Money Market Instruments, Mutual Fund Schemes, Life Insurance Schemes, Real Estate, Gold-Silver, Derivative Instruments, Commodity Market (commodities),Govt. Securities etc. The proposed study is limited to investment avenues available in Indian capital market.

Investors are free to select any of these alternative avenues for designing their portfolio depending upon their needs and preferences. All categories of investors are equally interested in safety, liquidity and return from their investment.

1.4 PORTFOLIOMANAGEMENT

Portfolio management is all about strengths, weaknesses, opportunities and threats in the choice of investment of debt vs. equity, domestic vs. international, growth vs. safety, and many other tradeoffs encountered in the attempt to minimize risk for a target level of return. It is the art and science of making decisions about investment mix and policy, matching investments to objectives, asset allocation for individuals and institutions, and balancing risk against performance.

According to modern portfolio theory, one can reduce their investment risk by creating a diversified portfolio that includes different types, or classes, of securities so that at least some of them may produce strong returns in any economic climate.

These explanations contain a number of important ideas as a portfolio consists of investmentin many securities. Owning a portfolio involves making choices i.e. deciding what additional stocks, bonds, or other financial instruments to buy; when to buy; what and when to sell; and so forth. Making such

decisions is a form of management. The management of a portfolio is goal-driven. For an investment portfolio, the specific goal is to increase the value. Managing a portfolio involves inherent risks. Portfolio management is a process encircling many activities, which may be classified as;

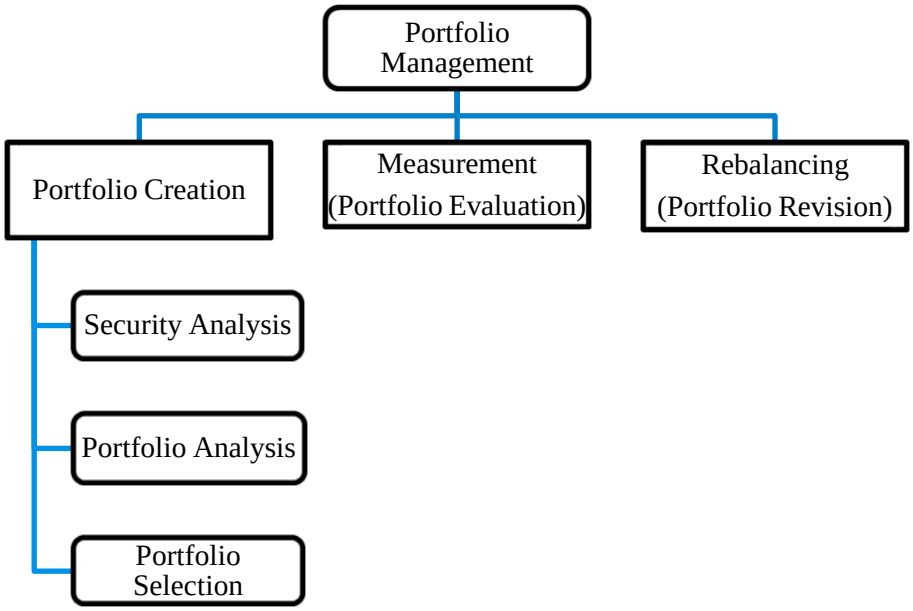

Figure: 3 Portfolio Management

Security analysis consists of examining the risk-return characteristics of individual securities. A basic strategy in securities investment is to buy underpriced securities and sell overpriced securities. But the problem is how to identify underpriced and overpriced securities? The answer to this issecurity analysis. There are two alternative approaches to security analysis viz. Fundamental Analysis and Technical Analysis

Fundamental analysisconcentrates on the fundamental factors affecting the company such as the EPS of the company, the dividend pay-out ratio, the competition faced by the company, the market share, quality of management, etc. Fundamental analysis helps to identify fundamentally strong companies whose shares are worthy to be included in the investor's portfolio.

Technical analysis believes that share price movements are systematic and exhibit certain consistent pattern. Thus, it studies past movements in the prices of shares to identify trends and patterns and then predict the future price movements. The current market price is compared with the future predicted price to determine the extent of mispricing. Technical analysis is an approach which concentrates on price movements and ignores the fundamentals of the shares.

Portfolio analysisis the phase of portfolio management consists of identifying the range of possible portfolios that can be constituted from a given set of securities and calculating their return and risk for further analysis. In other word, portfolio analysis considers the determination of future risk and return in holding various blends of individual securities.

Portfolio analysis provides the input for the next phase in portfolio management which is known as **portfolio selection**. The goal of portfolio construction is to generate a portfolio that provides the highest returns at a given level of risk. A portfolio having this characteristic is known as an efficient portfolio. The inputs from portfolio analysis can be used to identify the set of efficient portfolios. From this set of efficient portfolios, the optimal portfolio has to be selected for investment.

Measurement (portfolio evaluation)primarily refers to the determination of how a particular investment portfolio has performed relative to some comparison benchmark. The evaluation of portfolio performance is important for several reasons. First, the investor, whose funds have been invested in the portfolio, needs to know the relative performance of the portfolio. The performance review must generate and provide information that will help the investor to assess any need for rebalancing of his investments. Second, the management of the portfolio needs this information to evaluate the performance of the manager of the portfolio and to determine the manager's compensation, if that is tied to the portfolio performance. The performance evaluation methods generally do by using Sharpe ratio Treynor ratio and Jensen's alpha.

Rebalancing (Portfolio revision)is process wherethe investor has to constantly monitor the portfolio to ensure that it continues to be optimal. As the economy and financial markets are dynamic, changes take place almost daily. As time passes, securities which were once attractive may cease to be so. New securities with promises of high returns and low risk may emerge. The investor now has to revise his portfolio in the light of the developments in the market. This revision leads to purchase of some new securities and sale of some of the existing securities from the portfolio. The mix of securities and their proportion in the portfolio changes as a result of the revision.

1.5 NEED OF THE STUDY

Investment has been always a tough task for an individual as investment contains asymmetric information which leads to ambiguous investment decision making. Initially, there were very limited

exposures of different investment avenues. People were aware about the banks and post-office's financial instruments where they use to invest because of the financial security as 'the major features of an investment are safety of principal amount, liquidity, income stability, appreciation and easy transferability' (Pandian V.A. &Thangadurai G., 2013) and in past days the returns of the above said instruments were reasonably good but in the current scenario the banks and the post-office are not giving much returns,therefore people have started looking for the other investment avenues where they can earn better return at minimum risk. The modern financial instruments fascinates the common investors as it seems to give good returns on investment but at the same time it is more risky as well.

The Indian investment industry is witnessing a rapid growth as a result of infrastructural development, manufacturing and service sector, in personal financial assets and rise in foreign participation. With the growing risk appetite, rising income, and increasing awareness mutual funds and shares are becoming preferred investment vehicles like bank's fixed deposits and post office savings that are considered safe (Velmurugan G., Selvam V.&Nazar A., 2015).

Nowadays various investment avenues are attracting the young generation and others as due to COVID – 19 pandemic, in this pandemic people have lost their earning sources and started looking for other options where they can earn. As per Money control amidst the global pandemic and market disruptions, Indian investors have shown increased interests in equity market and opened 14.2 million new demat account during fiscal year 2020-21which is highest record and it almost three times the number in the previous fiscal year. The need of the proposed study arises as there are several behavioral factors which affect the portfolio management decisions of common investors. Understanding the impacts of behavioral biases on portfolio management decisions, would make the investors aware about the risk associated with it, which can make thecommon investors capable of taking corrective measures in advance.

This study would help to understand the present scenario and future opportunities in this segment and also helps the individuals in theirportfolio management decisionswhich would minimize the risk and maximizes the return.

SECTION II: LITERATURE REVIEW

For the purpose of the study, a detailed review of literature is conducted to identify the factors affecting decision making of common investors in the process of portfolio management. The review is first classified into two broad categories; factor affecting decision making, methodological approach, and common investor's portfolio creation, evaluation and revision.

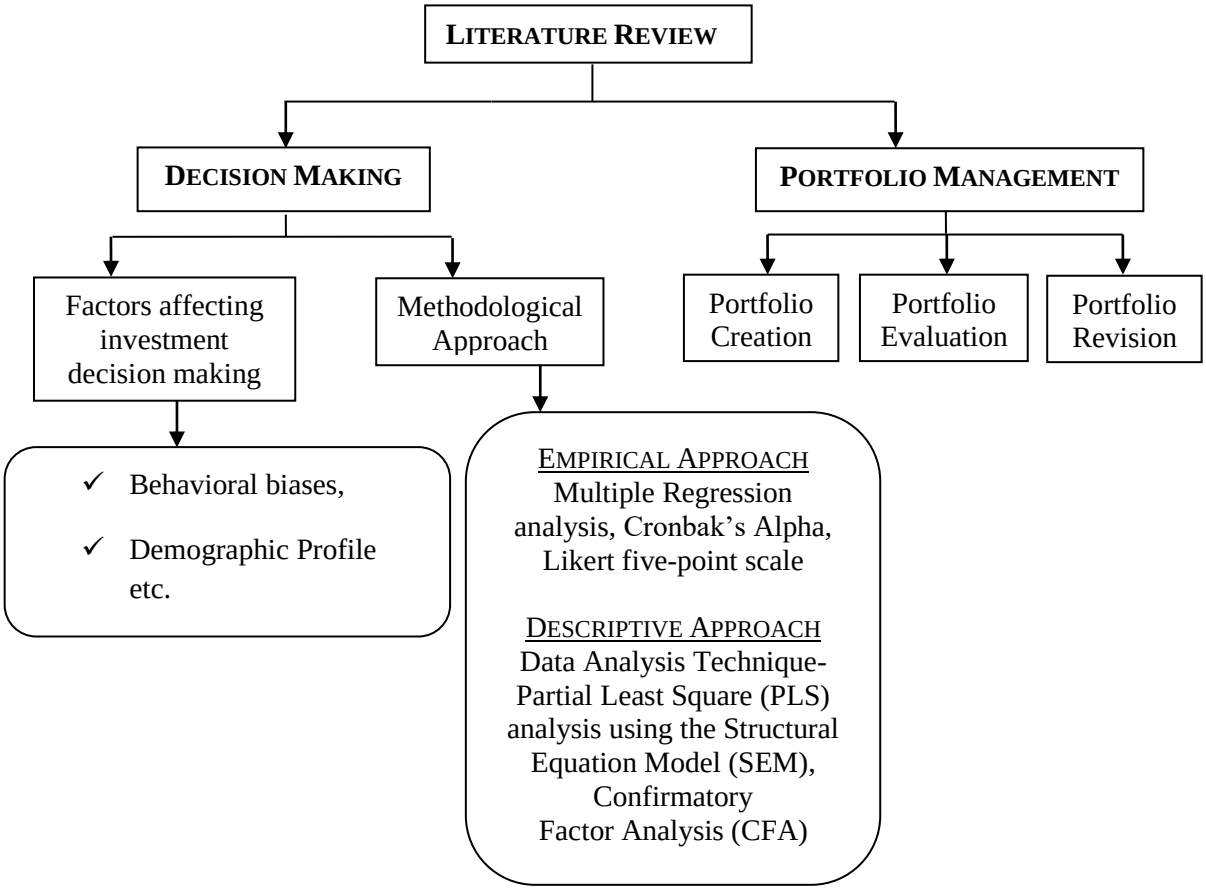
LITERATURE REVIEW
DECISION MAKING
PORTFOLIO MANAGEMENT
Factors affecting investment decision making
Methodological Approach
Portfolio Creation
Portfolio Evaluation
Portfolio Revision
✓ Behavioral biases,
✓ Demographic Profile etc.
EMPIRICAL APPROACH
Multiple Regression analysis, Cronbak's Alpha, Likert five-point scale
DESCRIPTIVE APPROACH
Data Analysis Technique- Partial Least Square (PLS) analysis using the Structural Equation Model (SEM), Confirmatory Factor Analysis (CFA)

Figure: 4 Taxonomy Structure

The literature review has been conducted taxonomically, as indicated in the above Figure.

2.1 LITERATURE REVIEW BASED ON FACTORS AFFECTING INVESTMENT DECISION MAKING AND THE METHODOLOGICAL APPROACH

On studying behavioral factors on individual investors' decision making and investment performance, Cao M.M., Nguyen N. T. & Tran T.T. (2021) have foundthat Heuristic, Prospect, Market, and Herding directly and positively affect investment decision-making. Whereas Nareswari N, Balqista A.S. &NegoroN.P.(2021) in their study have found that sentiment of investors, overconfidence, salience, overreaction, and herd behavior positively affect investment decision making.

Elhussein N.H.A. &Abdelgadir J.N.A. (2020), have reported on studying behavioral bias in individual investment decision making, that behavioral biases play a noticeable role in individual investment decision making process regardless of the degree of development of the stock market. On the other hand Raut R. K. (2020) has found significant effect of all predictive variables. Past behaviors have shown no significant direct impact on investors' intention, on studying impacts of past behavior, financial literacy on decision making.

On conducting research on the influence of risk perception, risk tolerance, overconfidence and loss aversion towards investment decision making, Ainia N.S.N. &Lutfi L. (2019) have found that risk perception has a significant and negative effect on investment decision making, risk tolerance and overconfidence have a significant and positive effect on investment decision making, while loss aversion has no effect on investment decision making. On the other hand, Mushinada V.N.C. (2019) has reported on conducting research on 'individual investors irrational or adaptive to market dynamics', that the evidence for the existence of cognitive biases alongside rationality and the investors tendency to adapt to the changing environment once experience losses or uncertain events.

Boda J.R. &Sunitha G. (2018) have studied investors' psychology in investment decision making and found that psychological and emotional factors affect investing. On investigating behavior of individual investors,Raut R.K., Das N. & Mishra R. (2018), have reported that the investors are significantly influenced by herding, information cascades, anchoring, representativeness and overconfidence while contagion shown the insignificant result. On the other hand, Malhotra S.K. (2018) has found using system dynamics model in her study on 'Strategies to mitigate behavioral risk in investment decision making', that mostly investors are influenced by irrational decision which leads to the investment biases.

On studying influence of behavioral factors affecting investment decision, Antony A. & Joseph A.I. (2017) have found that the investors of Kerala were highly influenced with overconfidence bias and regret aversion. Herd behavior had less effect on their decision-making.

Zubair M., HongXing T.F. &Iqbal A. (2016), have reported on investigating the impacts of personality traits on information search and trading behavior of investors, that investors' personality has significant impacts information search and trading behavior of investors.

On studying the impact of psychological factors on investors' decision making, Bakar S. & Yi M.N.C. (2015) have found that overconfidence, conservatism and availability bias have significant impacts on the investors' decision making while herding behavior has no significant impact on the investors' decision making. It is also found that the psychological factors are dependent of individual's gender.

Sultana S.T. &Paradhasaradhi S. (2012) have reported on studying factors influencing Indian individual equity investors' decision making and behavior, that the factors like; Individual Eccentric, Wealth Maximization, Risk Minimization, Brand Perception, Social Responsibility, Financial Expectation, Accounting information, Government & Media, Economic Expectation and Advocate recommendation factors impact on decision making.

Sharma P., Agrawal P. (2015) reported intheirstudy on 'Investors' perception and attitude towards mutual funds as an investment option' that Investors' perception is dependent on demographic profile and liquidity, flexibility, tax savings, service quality and transparency etc. while choosing investment avenue for investment.On the other hand, Velmurugan G., Selvam V.&Nazar A., (2015) have foundthat the aged and high income investors prefer to invest only in post office and bank deposits for safety investment reason.

On studying 'Investor's Preferences towards Mutual Fund Industry in Trichy',Rathnamani V.(2013) found that Investors prefer high return at low level of risk, safety liquidity, and investors are willing to take moderate and low level risk.Pandian V.A. &Thangadurai G. (2013) have investigated on studying on investors preferences on various investment avenues, that banks' fixed deposits and gold are the preferred investment avenues for investors.On conducting research on similar study, Agrawal G., Jain M. (2013) have found that maximum investors are aware about banks, LIC and Real states investment avenues only. Although Real Estate is the most preferred investment avenue among the investors of Mathura. Return is the main criterion of investors for their investment.

Singh B.K. (2012) has reported on studying investors' attitude towards mutual funds as an investment option' that most of the investors are confused about MF due to lack of awareness however demographic factors such as gender, income and level of education except age and occupation have influence the investors' attitude towards MF. Whereas on studying Fund Selection Behavior of Individual Investors Towards Mutual Funds - with Reference to Mumbai City', Rangnathan K. (2006)

hasfound that most of the investors are risk averse and they preferred risk free financial instruments to invest in, which is going to help the investorup togreat extent.

2.2 PORTFOLIO MANAGEMENT

Jin M., Li Z. & Yuan S. (2021), have found after applying Markowitz and Index model on portfolio selection, that the optimal portfolio can be achieved by comparing the two models under different conditions. On studying 'The impact of COVID-19 on formation and evaluation of portfolio performance' by using Sharpe single index model on select stocks, Nurhayati I., Endri E., Suharti T., Aminda R.S. &Muniroh L. (2021) have reported that the portfolio during the COVID-19 has a negative Sharpe ratio, meaning that portfolio performance is underperforming. The findings provide evidence that COVID-19 has had a negative impact on the stock market so that many investors have suffered losses on their portfolios. Whereas Huparikar A. &Shinde N. (2021), on their study on 'Diversification application in portfolio management with respect to risk and investment using VAR (value at risk), which is considered as the technique to measure the risk factor of portfolio, found that the diversification in investment helps in minimizing the risk of the portfolio.

Sharma R., Vora M., Sheth R. &Bhavathankar P. (2020) have reported on studying an efficient method to provide investment avenues to retail investors, using several techniques such as Risk Identification Algorithm, Selecting K best Algorithm, and Portfolio Strength Index, that the final solution minimizes the risk associated with the suggested investment plan and at the same time maximizing the returns which can be generated from the invested amount. The system uses Knapsack Algorithm, Sharpe Ratio, maximization techniques to improve the quality and provide investors with a solution towards an efficient investment plan. On the other hand, Janabi M.A.M.A. (2020) in his study aimed to examine the theoretical foundations for multivariate portfolio optimizationalgorithms under illiquid market conditions. In this special emphasis was devoted to the application of arisk-engine, which is based on the contemporary concept of liquidity-adjusted value-at-risk (LVaR), tomultivariate optimization of investment portfolios and found that the portfolio/risk manager can specify different closeout horizons and dependence measures and calculate the necessary LVaR and resulting investable portfolios. In addition, portfolio managers can compare the return/risk ratio and asset

allocation of obtained investable portfolios with different liquidation horizons in relation to the conventional Markowitz's mean-variance approach.

Oliinyk V. &Kozmenko O. (2019) in their study on optimization of investment portfolio management, using VAR indicator, the optimal function of managing the investment portfolio in the form of a share of the income received is found. On investigating a novel approach to select the best portfolio considering the preferences of thedecision maker, Fernandeza E., Navarroa J., Solaresa E. &Coellob C.C. (2019), reported that their approach is compared, using real historical data, with an outstanding multi-objective evolutionary algorithm, MOEA/D, and some well-known benchmarks in Modern Portfolio Theory and Finance Theory, namely, the Mean-Variance approach and the Dow Jones Industrial Average index and it was found that proposed approach was able to find satisfactory portfolios in the context of the experiments.Shrotriya V. (2019), on studying Techniques of Portfolio Management Adopted by Individual Investors, found that most of the individual investors are using their prudence only. They are depending on their own knowledge of investment avenues. They are actually not aware of many factors related to investments. They need to be educated financially. Individuals are not even aware of the simple concept of time value of money. They do not understand that inflation negatively affects the future returns. Investors also need to understand that investing only in fixed income investment avenues is not going to help in building large corpus and they also need to invest in equity, as per their risk appetite, surplus income, age etc. Knowledge of different types of investment avenues and the level of risk associated with such avenues is desirable before anyone starts investing. It is always not advisable to remain safe by investing in government and bank securities, as these offer only risk-free rate of return, which is usually equal to the inflation rate, meaning that the spending power of the money remains same. On the other side, it is advised to take calculated risk, in order to achieve the objectives of the investments made by individuals. It is also advisable to seek guidance from investment experts or portfolio managers, as and when needed.

Songa Q., AnqiLiua, Steve Y. Yanga,(Feb'2017), on studying stock portfolio selection using learning-to- rank algorithms with news sentiment, found that learning-to-rank algorithms are effective in producing reliable rankings of the best and the worst performing stocks based on investors' sentiment.

On studying on An intelligent short term stock trading fuzzy system for assisting investors in portfolio management, Chourmouziadis K. &Chatzoglou P.D. (2015) reported that with or without taking into consideration transaction costs, the return of the proposed fuzzy model is superior to the returns of the buy and hold strategy. The proposed system can be characterized as conservative, since it produces smaller losses during bear market periods and smaller gains during bull market periods compared with the buy and hold strategy.

Raja A. (2012) has reported on studying portfolio construction through price earnings ratio, found that investing in stock with lower P/E multiple creates sound possibility for better returns. Even the correlation coefficient also gives the similar results. P/E multiple and returns are negatively correlated.

TABLE 1: SYNTHESIZED MATRIX OF LITERATURE REVIEW

S No	Author	Factors affecting portfolio management decision	Methodological Approach	Portfolio Management	Findings
1.	Cao M.M., Nguyen N. T. & Tran T.T. (2021)	✓			It was found that Heuristic, Prospect, Market, and Herding directly and positively affect investment decision-making.
2.	NareswariN, Balqista A.S. &NegoroN.P.(2021)	✓			They concludedthat sentiment of investors, overconfidence, salience, overreaction, and herd behavior positively affect investment decision making.
3.	Jin M., Li Z. & Yuan S. (2021)		✓	✓	Reported that after applying Markowitz and Index model on portfolio selection, that the optimal portfolio can be achieved by comparing the two models under different conditions.
4.	Nurhayati I., Endri E., Suharti T., Aminda R.S. &Muniroh L. (2021)		✓	✓	Explored that the portfolio during the COVID-19 has a negative Sharpe ratio, meaning that portfolio performance is underperforming. The findings provide evidence that COVID-19 has had a negative impact on the stock market so that many

					investors have suffered losses on their portfolios.
5.	Huparikar A. &Shinde N. (2021)		✓	✓	Concluded that the diversification in investment helps in minimizing the risk of the portfolio.
6.	Raut R. K. (2020)	✓			Found significant effect of all predictive variables. Past behavior shown no significant direct impact on investors' intention.
7.	Elhussein N.H.A. &Abdelgadir J.N.A. (2020)	✓			Reported that behavioral biases play a noticeable role in individual investment decision making process regardless of the degree of development of the stock market.
8.	Sharma R., Vora M., Sheth R. &Bhavathankar P. (2020)		✓	✓	Have concluded after their study that the final solution minimizes the risk associated with the suggested investment plan and at the same time maximizing the returns which can be generated from the invested amount.
9.	JanabiA. & M.A.M. (2020)		✓	✓	In this special emphasis was devoted to the application of a risk-engine, which is based on the contemporary concept of liquidity-adjusted value-at-risk (LVaR), to multivariate optimization of investment portfolios and found that the portfolio/risk manager can specify different closeout horizons and dependence measures and calculate the necessary LVaR and resulting investable portfolios.
10.	Ainia N.S.N. &Lutfi L. (2019)	✓			Found that risk perception has a significant and negative effect on investment decision making, risk tolerance and overconfidence have a significant and positive effect on investment decision making, while loss aversion has no effect on investment decision making.
11.	Mushinada V.N.C. (2019)	✓			Reported that the evidence for the existence of cognitive biases alongside rationality and the investors tendency to adapt to the changing environment once experience losses or uncertain events.
12.	Oliinyk V. &Kozmenko O. (2019)		✓	✓	The optimal function of managing the investment portfolio in the form of a share of the income received is found.
13.	Fernandeza E., Navarroa J., Solaresa E. &Coellob C.C. (2019)		✓	✓	Reported that their approach is compared, using real historical data, with an outstanding multi-objective evolutionary algorithm, MOEA/D, and some well-known benchmarks in Modern Portfolio Theory and Finance Theory, namely, the Mean-Variance approach and the Dow Jones Industrial Average index and it was found that proposed approach was able to find satisfactory portfolios in the context of the experiments
14.	Shrotriya V. (2019)		✓	✓	Found that most of the individual investors are using their prudence only. They are depending on their own knowledge of investment avenues. They are actually not aware of many factors related to investments. They need to be educated financially.

15.	Boda J.R. &Sunitha G. (2018)	✓			Reported that psychological and emotional factors affect investing.
16.	Raut R.K., Das N. & Mishra R. (2018)	✓			Have reported that the investors are significantly influenced by herding, information cascades, anchoring, representativeness and overconfidence while contagion shown the insignificant result.
17.	Malhotra S.K. (2018)	✓			Found that mostly investors are influenced by irrational decision which leads to the investment biases.
18.	Songa Q., AnqiLiua, Steve Y. Yanga,(Feb'2017)		✓	✓	Reported that learning-to-rank algorithms are effective in producing reliable rankings of the best and the worst performing stocks based on investors' sentiment.
19.	Antony A. & Joseph A.I. (2017)	✓			Found that the investors of Kerala were highly influenced with overconfidence bias and regret aversion. Herd behavior had less effect on their decision-making.
20.	Zubair M., HongXing T.F. &Iqbal A. (2016)	✓			Have reported on investigating the impacts of personality traits on information search and trading behavior of investors, that investors' personality has significant impacts information search and trading behavior of investors.
21.	Sharma P., Agrawal P. (2015)		✓		It is found that Investors' perception is dependent on demographic profile and liquidity, flexibility, tax savings, service quality and transparency etc. while choosing investment avenue for investment.
22.	Chourmouziadis K. &Chatzoglou P.D. (2015)		✓	✓	It was reported that with or without taking into consideration transaction costs, the return of the proposed fuzzy model is superior to the returns of the buy and hold strategy.
23.	Velmurugan G., Selvam V. &Nazar A., (2015)		✓		Found that the aged and high income investors prefer to invest only in post office and bank deposits for safety investment reason.
24.	Bakar S. & Yi M.N.C. (2015)	✓			Investigated that overconfidence, conservatism and availability bias have significant impacts on the investors' decision making while herding behavior has no significant impact on the investors' decision making. It is also found that the psychological factors are dependent of individual's gender.
25.	RathnamaniV.(2013)		✓		Has found that Investors prefer high return at low level of risk, safety liquidity, and investors are willing to take moderate and low level risk.
26.	Pandian V.A. &Thangadurai G. (2013)		✓		Have investigated on studying on investors' preferences on various investment avenues, that banks' fixed deposits and gold are the preferred investment avenues for investors.
27.	Agrawal G., Jain M. (2013)		✓		Have concluded that maximum investors are aware about banks, LIC and Real states investment avenues only. Although Real Estate is the most preferred investment avenue among the

					investors of Mathura. Return is the main criterion of investors for their investment.
28.	Sultana S.T. &Paradhasaradhi S. (2012)	✓			Reported on studying factors influencing Indian individual equity investors' decision making and behavior, that the factors like; Individual Eccentric, Wealth Maximization, Risk Minimization, Brand Perception, Social Responsibility, Financial Expectation, Accounting information, Government & Media, Economic Expectation and Advocate recommendation factors impact on decision making.
29.	Singh B.K. (2012)		✓		Investigated and found that most of the investors are confused about MF due to lack of awareness however demographic factors such as gender, income and level of education except age and occupation have influence the investors' attitude towards MF.
30.	Raja A. (2012)		✓	✓	Found that investing in stock with lower P/E multiple creates sound possibility for better returns. Even the correlation coefficient also gives the similar results. P/E multiple and returns are negatively correlated.

2.3 RESEARCH GAP

The aforementioned studies in behavioral finance conducted by the previous researchers provide various observations which contradict the basic assumption of rationality of the traditional and modern finance models. In previous studies, holistic view of behavioral factors affecting decision making process has not been done as far as individual's portfolio creation is concerned. This illustrates gaps in the existing behavioral finance studies and addresses some emerging areas which need further exploration

The previous studies explored the role of the following behavioral constructs – personality, mindfulness, consciousness and religiosity as precursor to decision maker's intuition and rationality. The distinct demographic variables pertinent in financial decision-making framework have also been explored. Still, there are many more **variables like spirituality, culture, emotional intelligence and others** as discussed earlier, which were beyond the scope of the present study.The previous studies have used accepted items/factors as suggested by the original researchers in the standardized scales. An extended study can adapt the scales to Indian cultural context and perform **confirmatory factor analysis** to suggest revised version of the original scales.

The existing decision-making models have failed to integrate the meaningful role of behavioral constructs. There is a need to develop a composite decision-making framework which incorporates the twin set of variables – **qualitative and quantitative**. The framework also needs to capture the relative hierarchy of the decision maker, possibly by exploring changing role of qualitative and quantitative factors for operational or strategic decisions.

The previous studies explored causal relationship amongst few behavioral variables. More such variables can be investigated and a comprehensive model based on the present framework, extending across **multiple variables** can be constructed and validated using structure equation modeling.

The previous studies have documented the role of behavioral factors for retail investors. The **other retail investor sub-categories** may exhibit dissimilar associations. Hence, examining a diverse sample will improve generalizations to suggest population parameters. These categories include active vs. passive investors, naïve vs. information investors, sophisticated V/s noise investors, and attentive V/s inattentive investors and alike.

The previous studies included innate characteristics, specific to an investor, which guides his/her individual decision making. Validity of the findings with respect to influence by peer group, influence by an expert/manager and **group dynamics** needs to be explored further.

The previous studies were limited to Indian retail investors representing a specific cultural background. The behavioral variable, religiosity is a socio-cultural phenomenon which is specific to the religious tradition and cultural set up of a nation. Hence, it would be prudent to conduct **cross-cultural studies** to extend the present findings across multiple cultures and build a sound financial decision-making theory.

Though, the previous research framework examined the moderating effect of age, gender, investment experience and investment horizon, yet there are other **demographic variables** like income, education, family size and background, affluence and others which can be explored for a better understanding.

A major limitation of survey technique adopted in previous researches was respondent bias manifesting as a tendency to report positive image about oneself. In order to overcome this limitation and suggest robust findings, it is prudent to engage **multiple methodologies.** These could include

experimental approach to record the cause and effect relationship under control settings or qualitative techniques like focus group techniques to assimilate views of multiple stakeholders.

Behavioral variables are not consistent across time and scenarios. Hence, a **longitudinal study** to capture the changes in behavioral constructs can provide better perspective.

The previous studies concentrated only on few behavioral biases affecting the investors using primary data. Results from the study are more indicative in nature than confirmative. However there is wide scope of future research for the researchers to use **secondary data**. The study based on secondary data will be helpful for possible market indicators.

SECTION III: CONCEPTUAL FRAMEWORK OF RESEARCH MODEL

Research that is more brilliant seeks to categorize behavior factors according to some kind of meaningful framework. Some authors refer to these factors as heuristics (rules of thumb), while others call them beliefs, judgments, or preferences; still other scholars classify biases along cognitive or emotional lines. While "this sort of factors taxonomy is helpful—an underlying theory about why people operate under bias has not been produced. Instead of a universal theory of investment behavior, behavioral finance research relies on a broad collection of evidence pointing to the ineffectiveness of human decision making in various economic decision-making circumstances" (Pompian, 2006).

3.1 SELECTED BEHAVIORAL FACTORS AFFECTING DECISION MAKING

Some common behavioral factors which affect the decision making of investors the most are given hereunder:

3.1.1 INVESTOR SENTIMENT

There are two crucial things in investment viz; returns, and risk. Investors want maximum returns with minimal risk. Another equally important component is the volatility of the stock returns. Brown and Cliff (2004) investigate investor sentiment and short-term returns on market aggregates. Using two surveys of investor sentiment, namely a daily survey by the American Association of Individual Investors and a weekly survey by Investor Intelligence, they found that the level of sentiment was highly correlated with the volatility of market returns.

3.1.2 OVERCONFIDENCE

Overconfidence is a cognitive bias. It is the tendency to overestimate one's own skills and predictions for success. Kahneman and Tversky (1979 & 1990) have provided a theory that describes how decision-makers actually behave when confronted with choices under uncertainty. Overconfidence can be summarized as unwarranted faith in one's intuitive reasoning, judgments, and cognitive abilities(Pompian, 2006).

3.1.3 REPRESENTATIVENESS

Representativeness refers to judgments based on stereotypes, a part of cognitive bias. Antony A. & Joseph A.I., (2017), explain the representative bias as the tendency of an investor to evaluate the past price movements to predict future price. They believe that the current performance of stock is an indicator for future performance.

3.1.4 REGRET AVERSION

Regret Aversion people may exhibit fear that their decision will turn out to be wrong. Antony A. & Joseph A.I., (2017), found that there is a human tendency to feel the pain of regret for having made errors, they book profits in a winning stock and then felt I could have waited and hold losing stock for too long expecting trend reversal.

3.1.5 HERDING

Herd behavior is a form of heuristics where individuals are led to conform to the majority of individuals, present in the decision-making environment, by following their decisions. The investment decision of the investor is based on recommendations given by famous analyst.News about the company (newspapersand magazines) affects their investment decision. Lin H-W, (2012) found that herding is a behavior that follows the majority decision instead of relying on movements of stock price.

3.2 PROBLEM STATEMENT

Recent global financial crisis reveals the importance of identifying the factors influencing the investor behavior in evaluating the common investor's investment decision making process.The current study is aimed to understand the challenges faced by common investors while taking investment decision.

The investment decisions of an investor influenced by emotions which he/she carries, in results the decision becomes irrational. The main question arises as-

- What kind of common investment behaviour biases a common investor carries?
- How the behavioural biases affect the decision making of investors?
- Whether these behavioural biases vary according to the investor's profile?
- What are the methods which can minimize the impact of the above biases or to make the decision more rational?

3.3 OBJECTIVES OF THE STUDY

As per discussion in the foregoing, the proposed study aims to achieve the following objectives.

1. To find out selected behavioral biases present in portfolio management decision of common investors.
2. To analyze the impact of selected behavioral biases on portfolio management decision of common investors.
3. To explore the relationship of demographic variables withselected behavioral biases and portfolio management decisions of common investors.
4. To recommend the way forward to the common investors, to alleviate the impact of the selected behavioral phenomena on investment portfolio decision.

3.4 CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

In this section a conceptual framework is proposed depicting the impact of behavioral factors on portfolio management decisions and its effects on return on investment, investors' sentiment and investors' confidence. The study intends to explore and examine the above impacts in detail.

In the below given figure, first part represents the impacts of the selected behavioral biases on portfolio management decisions and second part represents the relationship of demographic variableswith behavioral biases and portfolio management decision of common investors. The third part represents the effects of these factors on return on investment, investors' sentiment and investors' confidence.

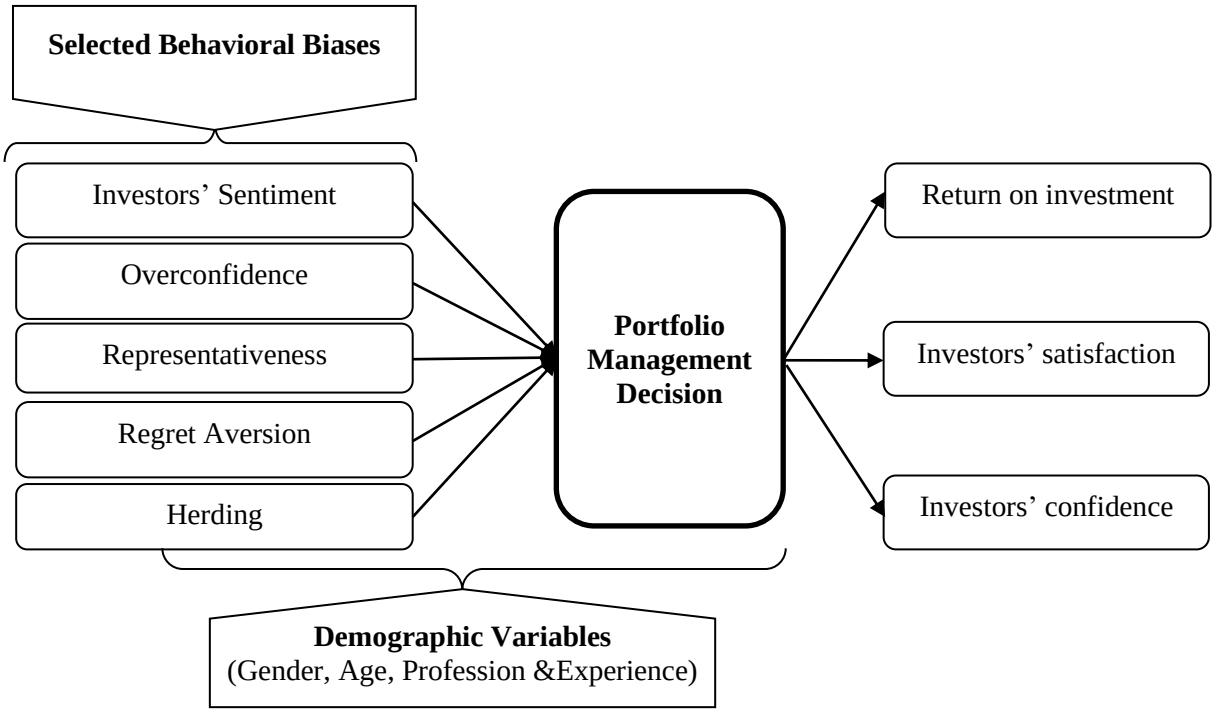

Figure: 5 Proposed Research Framework: Behavioral Factors Affecting Portfolio Management Decision of Common Investors

HYPOTHESES FRAMED AS PER THE CONCEPTUAL FRAMEWORK

H1a: There is no effect of investors' sentiment on portfolio management decision of common investors.

H1b: There is no effect of overconfidence on portfolio management decision of common investors.

H1c: There is no effect of representativeness on portfolio management decision of common investors.

H1d: There is no effect of regret aversion on portfolio management decision of common investors.

H1e: There is no effect of herding on portfolio management decision of common investors.

H2: Better the portfolio management decision, higher the return on investment.

H3: Better the portfolio management decision, greater the investors' satisfaction.

H4: Better the portfolio management decision, higher the investors' confidence.

H5a: Gender of common investors has no influence on the relationship between behavioral biases and portfolio management decisions.

H5b: Age of common investors has no influence on the relationship between behavioral biases and portfolio management decisions.

H5c: Profession of common investors has no influence on the relationship between behavioral biases and portfolio management decisions.

H5d: Investment experience of common investors has no influence on the relationship between behavioral biases and portfolio management decisions..

SECTION IV: RESEARCH DESIGN, TOOLS AND METHODOLOGY

5.1 NATURE OF THE STUDY

The present study will be descriptive in nature as the study will help us in describing the impacts of behavioral biases in portfolio allocation decision making of common investors.

5.2 PROFILE AND SCOPE OF THE STUDY

The proposed study would focus on the impacts of behavioral biases of common investors on portfolio allocation decision making process. Here the common investors will be the individuals who are either experienced or with no experience. The study will also cover the common investors, ranging from those investing for long term to short or medium term, to those engaged in intra-day trading in Indian capital equity market.

5.3 SAMPLING PLAN

5.3.1 GEOGRAPHICAL AREA COVERAGE FOR SURVEY

The study would be carried out in Agra city which consist of all 7 zones as represented in Map 1 below. The map is obtained from Agra Development Authority (ADA). These zones are further divided into colonies and colonies are into households. Snapshot of the list of approved colonies in each zone is inserted in Appendix 1.

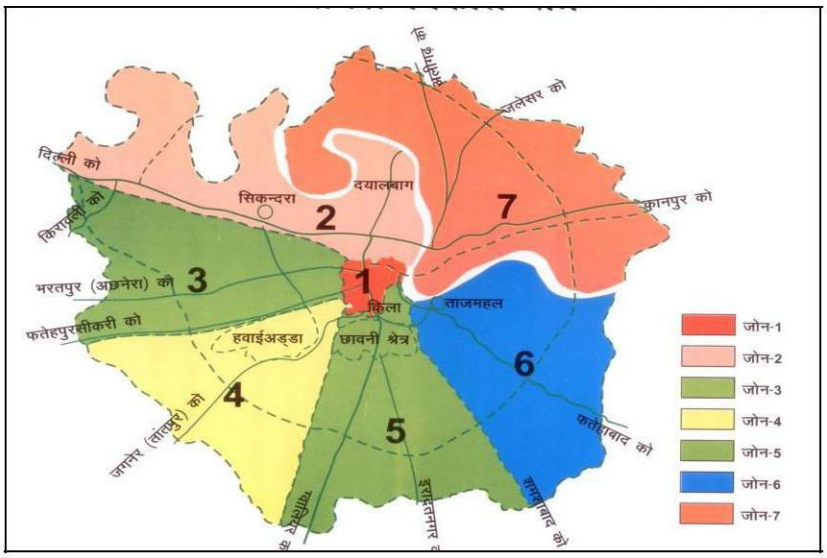

Figure: 6 Map 1: Planning Zones 2013 of Agra City by Agra Development Authority

5.3.2 SAMPLE SIZE CALCULATION

This research design requires huge sample size for the purpose of representation. For the purpose of

$$n = \frac{Z^2 \text{ x p}(1 - \text{p})}{M^2}$$

The above given sample size formula for infinite population (more than 50,000) is used to arrive at a representative number of respondents when population estimate is known (Godden, 2004):

Where: n = Sample Size for infinite population

Z = Z value, p = population proportion (expressed as decimal), M = Margin of Error

In order to minimize the bias and obtain realistic sample size, sample size is evaluated as- Estimating 50% of population with 5% Margin of Error

TABLE 2: CALCULATION OF POPULATION

Population Scenario	Z value at 95% Confidence level	Margin of Error	Sample size Calculation	Sample Size
50%	1.96	5%	(1.96)2*0.5(1-0.5)/0.052	**384.16**

Total estimated sample size for retail investors is 384.

5.3.3 SAMPLING TECHNIQUE

Sampling technique will be purposive sampling technique. Purposive sampling is a sampling method based on criteria that are related to the research objectives. The respondents would be the common investors.

5.4 DATA COLLECTION INSTRUMENTS

In this research study, both the primary and secondary data will be used to get adequate information for the achievement of the research objectives.

5.41 PRIMARY DATA

Primary data will be gathered using a structured questionnaire which will be presented to individual portfolio investors who are not experienced and very new to investing in stock market, either in person or by sending it to their email id's thereby ensuring anonymity and safety of data.

5.42 SECONDARY DATA

Secondary data will be collected from different sources like journals, articles of behavioral finance, newspapers, magazines, internet, and libraries etc.

5.5 STATISTICALTOOLS FOR DATA ANALYSIS

Relevant analytical tools like Discriminant Analysis, Weightage Scoring Method, Chi-Square Test for independence, factors analysis, multiple regressions, Structural Equation Modeling (SEM), T- test and ANOVA would be used as per availability of data.

5.6 MANAGERIAL IMPLICATION OF THE STUDY

From the practical prospective, this study will highlight the most prevailing behavioral biases that common investors should take care of while taking portfolio management decisions. Hence, while preparing an efficient portfolio, the fund manager or an individual will be able to consider individuals' emotion which plays a vital role. Although this study will be able to extract the ideas about the Indian investors' decision-making process and fulfill the proposed objectives.

SECTION V: PROPOSED CHAPTERIZATION

The proposed study will contain the following chapters:

- Chapter1 - Introduction
- Chapter 2 - Review of Literature
- Chapter 3 - Conceptual Framework
- Chapter 4 - Research Design, Tools and Methodology
- Chapter 5 - Data collection and Analysis

- Chapter 6 - Findings and Interpretations
- Chapter 7 – Managérial Implications, Conclusion and Directions for Future Research
- Bibliography and References
- Appendix

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Appendix 1

List of Approved Colonies (Zone wise) in Agra: (A Snapshot)

S No.	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
1	Adarsh Nagar	Adan Bagh Extention	Dayal Nagar	Aditya Bihar Colony	Mohanpura Colony	Daya Nagar	Shri Nagar
2	Dhakre Enclave	Anamika Vihar	Madhav Kunj Colony	Saket Colony	Rajdeep Colony	Shri Kripa Kunj	Gulab Nagar
3	PAC Residential Colony	Dev Nagar	Shanker Colony	Murli Vihar colony	Heera Nagar	Vaibhav Nagar, Sector 1 & 2	Chandra Nagar
4		Kabir Kunj	South North Arjun Nagar	Janakpuri Colony	Defence State I	Vaibhav Nagar, Sector 3 & 4	Shivpriya Complex
5		K.K. Nagar	West Arjun Nagar	Pushpanjali Dham colony	Santa Kunj	Amarlok Clony	Hardik Enclave
6		Lawyer's Colony	Vishnu Colony		Defence State	Bansal Nagar	Krishna Enclave
7		Tagore Nagar 1	Ashok Nagar		Ganga Enclave	Shiv Raj Nagar	Vijay Kunj
8		Tagore Nagar 2	Teacher's colony		Mahendra Enclve I	PNB Colony	Bunny Singh Colony
9		TulsiEnclave	Laxman Nagar		Brij Enclave	Handicraft Colony	Radha Puram
10		Uma Vihar	Pandav Nagar		Pushpanjali Greens	Sulabhvihar	
11		SurajVihar	Parshuram Nagar		Meenakshi Puram I	Pajeev Rahul Nagar	
12		Viashno Dham Garden	Ayodhya Kunj		Shivani Vihar	Gulmohar Enclave	
13		Heera Bagh Colony	AlkaPuri		Raja Enclave	Narottam Kunj	
14		Indrapuri Colony	Sate Bank colony		Vinayak Vihar	Kaveri Vihar	
15		Anupam Bagh	Keshav Kunj I		Radhika Vihar	Rohit Enclave	
16		Jawaher Colony	Saraswati Nagar		Vaibhav Nagar	Rahul Vihar I	
17		Adan Bagh	Ajeei Nagar Gate colony		Raman Kunj	Rahul Vihar II	
18		Officer's Colony	Janata colony		Madhav Vihar	Niti Bagh	
19		Lata Kunj	Laxmi Kunj		Shri Syam Dham I	Rani Bagh	